

OIPE

#2

RAW SEQUENCE LISTING

DATE: 11/01/2001

PATENT APPLICATION: US/09/978,303

TIME: 14:10:41

Input Set : A:\SeqList.txt

Output Set: N:\CRF3\11012001\I978303.raw

4 <110> APPLICANT: Julius, David J.
 5 Caterina, Michael J.
 6 Brake, Anthony J.
 8 <120> TITLE OF INVENTION: Nucleic acid sequences encoding
 9 capsaicin receptor and capsaicin receptor-related
 10 polypeptides and uses thereof
 12 <130> FILE REFERENCE: UCAL084CON
 C--> 14 <140> CURRENT APPLICATION NUMBER: US/09/978,303
 15 <141> CURRENT FILING DATE: 2001-10-15
 17 <150> PRIOR APPLICATION NUMBER: 09/235,451
 18 <151> PRIOR FILING DATE: 1999-01-22
 20 <150> PRIOR APPLICATION NUMBER: 60/072,151
 21 <151> PRIOR FILING DATE: 1998-01-22
 23 <150> PRIOR APPLICATION NUMBER: 08/915,461
 24 <151> PRIOR FILING DATE: 1997-08-20
 26 <160> NUMBER OF SEQ ID NOS: 48
 28 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 30 <210> SEQ ID NO: 1
 31 <211> LENGTH: 2880
 32 <212> TYPE: DNA
 33 <213> ORGANISM: R. rattus
 35 <400> SEQUENCE: 1
 36 cagctccaag gcacttgctc catttggggt gtgcctgcac ctagctgggt gcaaattggg 60
 37 ccacagagga tctggaaagg atggaacaac gggctagctt agactcagag gactctgagt 120
 38 ccccaaccca agagaactcc tgcctggacc ctccagacag agaccctaac tgcaagccac 180
 39 ctccagtgaa gcccacatc ttactacca ggaagctgac cgggctttt gggaaggggtg 240
 40 actcggagga ggctctctcc ctggactgcc ctatgagga aggcgggctg gcttctctgcc 300
 41 ctatcatcac tgcagctct gttctaacta tccagaggcc tggggatgga cctgccagt 360
 42 tcaggcgcgc atcccaggac tccgtctccg ctggtgagaa gcccgcgagg ctctatgatc 420
 43 gcaggagcat ctccgatgct gtggctcaga gtaactgcca ggagctggag agcctgctgc 480
 44 ccttctctgca gaggagcaag aagcgctga ctgacagcga gttcaaagac ccagagacag 540
 45 gaaagacctg tctgctaaaa gccatgctca atctgcacaa tgggcagaat gacaccatcg 600
 46 ctctgctcct ggacgttgcc cggaagacag acagcctgaa gcagtttgct aatgccagct 660
 47 acacagacag ctactacaag ggccagacag cactgcacat tgccattgaa cggcggaaca 720
 48 tgacgctggt gacctctctg gtggagaatg gacagatgt ccaggctgag gctaaccggg 780
 49 acttcttcaa gaaaaccaa gggaggcctg gcttctactt tggtagctg cccctgtccc 840
 50 tggctgctg caccacacag ctggccattg tgaagttcct gctgcagaac tctggcagc 900
 51 ctgcagacat cagcgcccg gactcagtgg gcaacacggt gcttcatgcc ctggtggagg 960
 52 tggcagataa cacagttgac aacaccaagt tctgacaag catgtacaac gagatcttga 1020
 53 tcttgggggc caaactccac cccagctga agctggaaga gatcaccaac aggaaggggc 1080
 54 tcacgccact ggctctggct gctagcagtg ggaagatcgg ggtcttgcc tacattctcc 1140
 55 agaggggat ccatgaaccc gactgcccac acctatccag gaagttcacc gaatgggct 1200
 56 atgggccagt gactcctcc ctttatgacc tgcctgcat tgacacctgt gaaaagaact 1260
 57 cggttctgga ggtgatcgt tacagcagca gtgagacccc taaccgtcat gacatgcttc 1320
 58 tctgtgaacc ctggaaccga ctctacagg acaagtggga cagattgtc aagcgcatct 1380
 59 tctacttcaa cttctctgct tactgctgtg atatgatcat cttaccgcg gctgcctact 1440
 60 atcggcctgt ggaaggcttg ccccccata agctgaaaaa caccgttggg gactatttcc 1500

ENTERED

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61 gagtcaccgg agagatcttg tctgtgtcag gaggagtcta cttcttcttc cgagggattc 1560
62 aatatttctt gcagaggcga ccatccctca agagtttggt tgtggacagc tacagtgaga 1620
63 tacttttctt tgtacagtcg ctgttcatgc tgggtgtctgt ggtactgtac ttcagccaac 1680
64 gcaaggagta tgtggcttcc atggtgttct ccctggccat gggctggacc aacatgctct 1740
65 actatacccg aggattccag cagatgggca tctatgctgt catgattgag aagatgatcc 1800
66 tcagagacct gtgccggttt atgttcgtct acctcgtgtt cttgtttgga ttttccacag 1860
67 ctgtggtgac actgattgag gatgggaaga ataactctct gcctatggag tccacaccac 1920
68 acaagtgccg ggggtctgcc tgcaagccag gtaactctta caacagcctg tattccacat 1980
69 gtctggagct gttcaagttc accatcggca tgggcgacct ggagttcact gagaactacg 2040
70 acttcaagcg tgtcttcacg atcctgttac tggcctatgt gattctcacc tacatccttc 2100
71 tgcacaacat gtcattgctc ctcatgggtg agaccgtcaa caagattgca caagagagca 2160
72 agaacatctg gaagctgcag agagccatca ccatcctgga tacagagaag agcttcctga 2220
73 agtgcagtag gaaggccttc cgctctggca agtgctgca ggtgggggtc actcctgacg 2280
74 gcaaggatga ctaccggtgg tgtttcaggg tggacgaggt aaactggact acctggaaca 2340
75 ccaatgtggg tatcatcaac gaggaccacg gcaactgtga gggcgtcaag cgcaccctga 2400
76 gcttctccct gaggtcagcg cgagtttcag ggagaaactg gaagaacttt gccctgggtc 2460
77 cccttctgag ggatgcaagc actcgagata gacatgccac ccagcaggaa gaagtcaac 2520
78 tgaagcatta tacgggatcc cttaagccag aggatgctga ggttttcaag gattccatgg 2580
79 tccaggggga gaaataatgg acactatgca gggatcaatg cgggggtcttt ggggtggtctg 2640
80 cttagggaaac cagcaggggt gacgttatct gggccactc tgtgcctgcc taggcacatt 2700
81 cctaggactt cggcgggcct gctgtgggaa ctgggaggtg tgtgggaatt gagatgtgta 2760
82 tccaaccatg atotccaaac atttggtttt caactcttta tggactttat taaacagagt 2820
83 gaatggcaaa tctctacttg gacacataaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2880

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86 <210> SEQ ID NO: 2

87 <211> LENGTH: 838

88 <212> TYPE: PRT

89 <213> ORGANISM: R. rattus

91 <400> SEQUENCE: 2

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92 Met Glu Gln Arg Ala Ser Leu Asp Ser Glu Glu Ser Glu Ser Pro Pro
93 1 5 10 15
94 Gln Glu Asn Ser Cys Leu Asp Pro Pro Asp Arg Asp Pro Asn Cys Lys
95 20 25 30
96 Pro Pro Pro Val Lys Pro His Ile Phe Thr Thr Arg Ser Arg Thr Arg
97 35 40 45
98 Leu Phe Gly Lys Gly Asp Ser Glu Glu Ala Ser Pro Leu Asp Cys Pro
99 50 55 60
100 Tyr Glu Glu Gly Gly Leu Ala Ser Cys Pro Ile Ile Thr Val Ser Ser
101 65 70 75 80
102 Val Leu Thr Ile Gln Arg Pro Gly Asp Gly Pro Ala Ser Val Arg Pro
103 85 90 95
104 Ser Ser Gln Asp Ser Val Ser Ala Gly Glu Lys Pro Pro Arg Leu Tyr
105 100 105 110
106 Asp Arg Arg Ser Ile Phe Asp Ala Val Ala Gln Ser Asn Cys Gln Glu
107 115 120 125
108 Leu Glu Ser Leu Leu Pro Phe Leu Gln Arg Ser Lys Lys Arg Leu Thr
109 130 135 140
110 Asp Ser Glu Phe Lys Asp Pro Glu Thr Gly Lys Thr Cys Leu Leu Lys
111 145 150 155 160
112 Ala Met Leu Asn Leu His Asn Gly Gln Asn Asp Thr Ile Ala Leu Leu

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113          165          170          175
114 Leu Asp Val Ala Arg Lys Thr Asp Ser Leu Lys Gln Phe Val Asn Ala
115          180          185          190
116 Ser Tyr Thr Asp Ser Tyr Tyr Lys Gly Gln Thr Ala Leu His Ile Ala
117          195          200          205
118 Ile Glu Arg Arg Asn Met Thr Leu Val Thr Leu Leu Val Glu Asn Gly
119          210          215          220
120 Ala Asp Val Gln Ala Ala Ala Asn Gly Asp Phe Phe Lys Lys Thr Lys
121 225          230          235          240
122 Gly Arg Pro Gly Phe Tyr Phe Gly Glu Leu Pro Leu Ser Leu Ala Ala
123          245          250          255
124 Cys Thr Asn Gln Leu Ala Ile Val Lys Phe Leu Leu Gln Asn Ser Trp
125          260          265          270
126 Gln Pro Ala Asp Ile Ser Ala Arg Asp Ser Val Gly Asn Thr Val Leu
127          275          280          285
128 His Ala Leu Val Glu Val Ala Asp Asn Thr Val Asp Asn Thr Lys Phe
129          290          295          300
130 Val Thr Ser Met Tyr Asn Glu Ile Leu Ile Leu Gly Ala Lys Leu His
131 305          310          315          320
132 Pro Thr Leu Lys Leu Glu Glu Ile Thr Asn Arg Lys Gly Leu Thr Pro
133          325          330          335
134 Leu Ala Leu Ala Ala Ser Ser Gly Lys Ile Gly Val Leu Ala Tyr Ile
135          340          345          350
136 Leu Gln Arg Glu Ile His Glu Pro Glu Cys Arg His Leu Ser Arg Lys
137          355          360          365
138 Phe Thr Glu Trp Ala Tyr Gly Pro Val His Ser Ser Leu Tyr Asp Leu
139          370          375          380
140 Ser Cys Ile Asp Thr Cys Glu Lys Asn Ser Val Leu Glu Val Ile Ala
141 385          390          395          400
142 Tyr Ser Ser Ser Glu Thr Pro Asn Arg His Asp Met Leu Leu Val Glu
143          405          410          415
144 Pro Leu Asn Arg Leu Leu Gln Asp Lys Trp Asp Arg Phe Val Lys Arg
145          420          425          430
146 Ile Phe Tyr Phe Asn Phe Phe Val Tyr Cys Leu Tyr Met Ile Ile Phe
147          435          440          445
148 Thr Ala Ala Ala Tyr Tyr Arg Pro Val Glu Gly Leu Pro Pro Tyr Lys
149          450          455          460
150 Leu Lys Asn Thr Val Gly Asp Tyr Phe Arg Val Thr Gly Glu Ile Leu
151 465          470          475          480
152 Ser Val Ser Gly Gly Val Tyr Phe Phe Phe Arg Gly Ile Gln Tyr Phe
153          485          490          495
154 Leu Gln Arg Arg Pro Ser Leu Lys Ser Leu Phe Val Asp Ser Tyr Ser
155          500          505          510
156 Glu Ile Leu Phe Phe Val Gln Ser Leu Phe Met Leu Val Ser Val Val
157          515          520          525
158 Leu Tyr Phe Ser Gln Arg Lys Glu Tyr Val Ala Ser Met Val Phe Ser
159          530          535          540
160 Leu Ala Met Gly Trp Thr Asn Met Leu Tyr Tyr Thr Arg Gly Phe Gln
161 545          550          555          560

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Input Set : A:\SeqList.txt
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162 Gln Met Gly Ile Tyr Ala Val Met Ile Glu Lys Met Ile Leu Arg Asp
163                               565                               570                               575
164 Leu Cys Arg Phe Met Phe Val Tyr Leu Val Phe Leu Phe Gly Phe Ser
165                               580                               585                               590
166 Thr Ala Val Val Thr Leu Ile Glu Asp Gly Lys Asn Asn Ser Leu Pro
167                               595                               600                               605
168 Met Glu Ser Thr Pro His Lys Cys Arg Gly Ser Ala Cys Lys Pro Gly
169                               610                               615                               620
170 Asn Ser Tyr Asn Ser Leu Tyr Ser Thr Cys Leu Glu Leu Phe Lys Phe
171 625                               630                               635                               640
172 Thr Ile Gly Met Gly Asp Leu Glu Phe Thr Glu Asn Tyr Asp Phe Lys
173                               645                               650                               655
174 Ala Val Phe Ile Ile Leu Leu Leu Ala Tyr Val Ile Leu Thr Tyr Ile
175                               660                               665                               670
176 Leu Leu Leu Asn Met Leu Ile Ala Leu Met Gly Glu Thr Val Asn Lys
177                               675                               680                               685
178 Ile Ala Gln Glu Ser Lys Asn Ile Trp Lys Leu Gln Arg Ala Ile Thr
179                               690                               695                               700
180 Ile Leu Asp Thr Glu Lys Ser Phe Leu Lys Cys Met Arg Lys Ala Phe
181 705                               710                               715                               720
182 Arg Ser Gly Lys Leu Leu Gln Val Gly Phe Thr Pro Asp Gly Lys Asp
183                               725                               730                               735
184 Asp Tyr Arg Trp Cys Phe Arg Val Asp Glu Val Asn Trp Thr Thr Trp
185                               740                               745                               750
186 Asn Thr Asn Val Gly Ile Ile Asn Glu Asp Pro Gly Asn Cys Glu Gly
187                               755                               760                               765
188 Val Lys Arg Thr Leu Ser Phe Ser Leu Arg Ser Gly Arg Val Ser Gly
189                               770                               775                               780
190 Arg Asn Trp Lys Asn Phe Ala Leu Val Pro Leu Leu Arg Asp Ala Ser
191 785                               790                               795                               800
192 Thr Arg Asp Arg His Ala Thr Gln Gln Glu Glu Val Gln Leu Lys His
193                               805                               810                               815
194 Tyr Thr Gly Ser Leu Lys Pro Glu Asp Ala Glu Val Phe Lys Asp Ser
195                               820                               825                               830
196 Met Val Pro Gly Glu Lys
197                               835
199 <210> SEQ ID NO: 3
200 <211> LENGTH: 2736
201 <212> TYPE: DNA
202 <213> ORGANISM: R. rattus
204 <400> SEQUENCE: 3
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206 gaaagctcgg agcgggccgc ggaggttccc acagcccat tactgtcagc gttgagccgc      120
207 acccctccgg gccgcacttc ctctctcagt ccccgtgcc ggagagcccc gctaggctcg      180
208 gtgatacctag cctgcagttt gcgcgcgcta caccttggct tcagcctgcg ggtcccagc      240
209 caggcctgcc cctgcggtat gagagaggaa ccttaacatc tccatctcta cagaggtttc      300
210 agctgtaagg agcatcctcc tctctcagga tgacttcagc ctccagcccc ccagctttca      360
211 ggctggagac ttccgatgga gatgaagagg gcaatgctga ggtgaacaag ggaagcagg      420
212 aaccgcccc catggagtca ccattccaga gggaggaccg gaattcctcc ctcagatca      480

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PATENT APPLICATION: US/09/978,303

DATE: 11/01/2001
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Input Set : A:\SeqList.txt
Output Set: N:\CRF3\11012001\I978303.raw

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213 aagtgaacct caacttcata aagagacctc ctaaaaaaac ttctgctccc agccagcagg 540
214 agccagatcg gtttgaccgt gaccgactct tcagtgtggt ctcccggggt gtcccgagg 600
215 aactgactgg actgctagaa tacctgcgct ggaacagcaa gtacctact gactctgcat 660
216 acacagaagg ctccactgga aagacgtgcc tgatgaaggc tgtgctgaac cttcaggatg 720
217 gggtaaatgc ctgcatcatg ccgctgctgc agattgacaa ggattccggc aatcccaagc 780
218 cctctgctca tgcacagtgc accgatgagt tctaccaagg ccacagtgcg ctgcacatcg 840
219 ccatagagaa gaggagcctg cagtgcgtga agctgctggt agagaatgga gcggatgttc 900
220 acctccgagc ctgtggccgc ttcttccaaa agcaccaagg aacttgtttc tattttggag 960
221 agctacctct ttctctggct gcgtgcacca agcagtggga tgtggtgacc tacctcctgg 1020
222 agaaccacac ccagccggcc agcctggagg ccaccgactc cctgggcaac acagtctgc 1080
223 atgctctggt aatgattgca gataactcgc ctgagaacag tgccctggtg atccacatgt 1140
224 acgacgggct tctacaaatg ggggcgcgcc tctgccccac tgtgcagctt gaggaaatct 1200
225 ccaaccacca aggcctcaca cccctgaaac tagccgcaa ggaaggcaaa atcgagattt 1260
226 tcaggcacat tctgcagcgg gaattctcag gaccgtacca gccctttcc cgaaagtta 1320
227 ctgagtgggt ttacggtcct gtgcgggtat cgctgtacga cctgtcctct gtggacagct 1380
228 gggaaaagaa ctcggtgctg gagatcatcg cttttcattg caagagcccg aaccggcacc 1440
229 gcattggtgt tttagaacca ctgaacaagc ttctgcagga gaaatgggat cggctcgtct 1500
230 caagattctt cttcaacttc gcctgctact tggctctacat gttcatcttc accgtcgttg 1560
231 cctaccacca gccttccctg gatcagccag ccacccctc atcaaaagcg acttttggg 1620
232 aatccatgct gctgctgggc cacattctga tctgcttggt gggatattac ctcttactg 1680
233 gccagctgtg gtacttttgg cggcggcgcc tgtttatctg gatctcattc atggacagct 1740
234 accttgaaat cctctttctc cttcaggctc tgctcacagt gctgtcccag gtgctgcgct 1800
235 tcattggagac tgaatgttac ctacccctgc tagtgttacc cctagtgtcg ggctggctga 1860
236 acctgcttta ctacacacgg gcctttcagc acacaggcat ctacagtgtc atgatccaga 1920
237 aggtcatcct tcgagacctg ctccgtttcc tgctggtcta cctggtcttc cttttcggct 1980
238 ttgctgtagc cctagtaagc ttgagcagag aggcccgagg tcccaaagcc cctgaagata 2040
239 acaactccac agtgacggaa cagcccacgg tgggccagga ggaggagcca gctccatct 2100
240 ggagcattct gtagcctcc ctagagctgt tcaagttcac cattgggatg ggggagctgg 2160
241 ctttccagga acagctgcgt tttcgtgggt tggctctgct gttgctgttg gcctacgtcc 2220
242 ttctcaccta cgtcctgctg ctcaacatgc tcattgctct catgagcgaa actgtcaacc 2280
243 acgttgctga caacagctgg agcatctgga agttgcagaa agccatctct gtcttgaga 2340
244 tggagaatgg ttactggtgg tgccggagga agaaacatcg tgaagggagg ctgctgaaag 2400
245 tcggcaccag gggggatggt acccctgatg agcgtggtg cttcaggggt gaggaagtaa 2460
246 attgggctgc ttgggagaag actcttccca ccttatctga ggatccatca gggccaggca 2520
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248 accatctgcc ccttcagggt ctcagctccc cctgatggcc cagatgcagc agcaggctgg 2640
249 caggatggag tagggaatct tcccagccac accagaggct actgaatttt ggtggaaata 2700
250 taaatatttt ttttgcataa aaaaaaaaaa aaaaaa 2736
252 <210> SEQ ID NO: 4
253 <211> LENGTH: 761
254 <212> TYPE: PRT
255 <213> ORGANISM: R. rattus
257 <400> SEQUENCE: 4
258 Met Thr Ser Ala Ser Ser Pro Pro Ala Phe Arg Leu Glu Thr Ser Asp
259 1 5 10 15
260 Gly Asp Glu Glu Gly Asn Ala Glu Val Asn Lys Gly Lys Gln Glu Pro
261 20 25 30
262 Pro Pro Met Glu Ser Pro Phe Gln Arg Glu Asp Arg Asn Ser Ser Pro
263 35 40 45

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Use of n and/or Xaa has been detected in the Sequence Listing.
Review the Sequence Listing to insure a corresponding
explanation is presented in the <220> to <223> fields of
each sequence using n or Xaa.

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/978,303

DATE: 11/01/2001
TIME: 14:10:42

Input Set : A:\SeqList.txt
Output Set: N:\CRF3\11012001\I978303.raw

L:14 M:270 C: Current Application Number differs, Replaced Current Application Number
L:366 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:367 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:370 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:384 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:386 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:387 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:388 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:389 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:390 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:391 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:392 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:393 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:413 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:414 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
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L:466 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:470 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:471 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:473 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:615 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20
L:699 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:713 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:717 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:719 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:725 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:731 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
L:733 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23
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L:1366 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41
L:1367 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41
L:1381 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42
L:1382 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42
L:1428 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45